

What Is Claimed Is:

1. A gas sensor (10) for determining a physical property of a measuring gas, in particular for determining the concentration of a gas component or the temperature of an exhaust gas, having a sensor element (20), positioned in a metal housing (21), which is sealed by at least one sealing element (32, 321, 322, 323, 331, 332, 333) positioned in a metal receptacle (31), the metal receptacle (31) being affixed to the housing (21), wherein the sealing element (32, 321, 322, 323, 331, 332, 333) surrounds the sensor element (20) in a centered position along its longitudinal extension L or on its half facing the measuring gas.
2. The gas sensor as recited in Claim 1, wherein the sensor element (20) is affixed in the housing (21) of the gas sensor (10) primarily by the sealing element (32) or the sealing elements (321, 322, 323, 331, 332, 333), and at least indirectly by the metal receptacle (31).
3. The gas sensor as recited in Claim 1 or 2, wherein the metal receptacle (31) directly adjoins a measuring gas chamber (28).
4. The gas sensor as recited in one of the preceding claims, wherein the sealing element (32, 321, 322, 323, 332) is integrally joined to the sensor element (20) and the metal receptacle (31).
5. The gas sensor as recited in one of the preceding claims, wherein the sealing element (32, 321, 322, 323, 332) is made up primarily of glass or of a glass ceramic.

6. The gas sensor as recited in Claim 4 or 5, wherein the expansion coefficient of the sealing element (32, 321, 322, 323, 332), which is integrally joined to the sensor element (20) and the metal receptacle (31), and the expansion coefficient of the sensor element (20) differ by no more than 10 percent.

7. The gas sensor as recited in one of the preceding claims, wherein the metal receptacle (31) is affixed to the housing (21) by an integral connection, in particular by a welded connection (41).

8. The gas sensor as recited in one of the preceding claims, wherein a sleeve (25) which surrounds a section of the sensor element (20) as well as a contacting of the sensor element (20) is provided on the side of the gas sensor (10) facing away from the measuring gas, and the metal receptacle (31) and the sleeve (25) are affixed to the housing (21) by a common integral connection, in particular a welded connection (41).

9. The gas sensor as recited in one of the preceding claims, wherein the metal receptacle (31) is cup-shaped and has a closed design on one side (35), the bottom (35) of the cup-shaped metal receptacle (31) having a recess (33) to receive the sensor element (20).

10. The gas sensor as recited in Claim 9, wherein the distance between the sensor element (20) and the side wall of the cup-shaped metal receptacle (31) is smaller than or equal to twice the height of the sensor element (20) at least in some places, the height of the sensor element (20) being the extension of the sensor element (20) perpendicular to its large surface.

11. The gas sensor as recited in Claim 9 or 10, wherein at its open end the metal receptacle (31) has a section (34) extending outward perpendicular to the longitudinal axis of the metal receptacle (31), to which an additional sleeve-shaped section (34) is connected.

12. The gas sensor as recited in one of the preceding claims, wherein a first glass-containing sealing element (321) and a second glass-containing sealing element (322) are provided, the sealing elements (321, 322) being positioned in the receptacle (31) one behind the other in the longitudinal direction of the sensor element (20), the glass of the first sealing element (321), which faces the measuring gas, having a higher melting point than the glass of the second sealing element (322), which faces away from the measuring gas, and the glass of the second sealing element (322) being completely molten after a heat treatment and forming an integral connection with the sensor element (20), while the glass of the first sealing element (321) is not molten or is not completely molten.

13. The gas sensor as recited in Claim 12, wherein a glass-containing third sealing element (323), which has a viscous consistency at the temperatures at which the gas sensor (10) is used, is provided on the side of the second sealing element (322) facing away from the measuring gas.

14. The gas sensor as recited in one of Claims 1 through 11, wherein a first sealing element (331) facing the measuring gas and a second sealing element (332) facing away from the measuring gas are provided, the sealing elements (331, 332) being positioned in the metal receptacle (31) one behind the other in the longitudinal direction of the sensor element (20), the first sealing element (331) being situated on the

side of the receptacle (31) facing the measuring gas, and the first sealing element (331) having a ceramic, and the second sealing element (332) containing glass or a glass ceramic.

15. The gas sensor as recited in Claim 14, wherein a third sealing element (333) of pressed ceramic powdered material is provided between the first and second sealing elements (331, 332).

16. A method for producing a gas sensor (10) as recited in one of the preceding claims, wherein the sensor element (20) and at least one sealing element (32, 321, 322, 323, 331, 332, 333) in its initial form are introduced into the metal receptacle (31); the composite of metal receptacle (31), sealing element (32, 321, 322, 323, 331, 332, 333) and sensor element (20) is subsequently heated to a temperature at which at least one sealing element (32, 322, 332) forms an integral connection with the sensor element (20) and the metal receptacle (31), and is then introduced into the housing (21); and the metal receptacle (31) is affixed in the housing (21).

17. The method as recited in Claim 16, wherein at least one sealing element (32, 322, 332) contains a glass-forming component, and the composite of metal receptacle (31), sealing element (32) and sensor element (20) is subjected to a heat treatment above the melting temperature of the glass-forming component of the sealing element (32, 322, 332) before being installed in the housing (21).